

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>WO72122PPC</b>	<b>FOR FURTHER ACTION</b> <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. <b>PCT/GB2004/002179</b>	International filing date (day/month/year) <b>19/05/2004</b>	(Earliest) Priority Date (day/month/year) <b>23/05/2003</b>
Applicant  <b>ORTUS MEDICAL LIMITED</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**IMPROVED CALCIUM PHOSPHATE BONE CEMENTS**

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☐ as suggested by the applicant.

☒ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/002179

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61L24/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61L A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, COMPENDEX, EMBASE, BIOSIS, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 425 949 B1 (VAN LANDUYT PASCALE ET AL) 30 July 2002 (2002-07-30)  column 3, line 27 - line 42 example 1 claim 8	1-5, 8, 10-25, 27-30
X	GBURECK U ET AL: "Surface properties of calcium phosphate particles for self setting bone cements" BIOMOLECULAR ENGINEERING, ELSEVIER, NEW YORK, NY, US, vol. 19, no. 2-6, August 2002 (2002-08), pages 51-55, XP004378070 ISSN: 1389-0344 the whole document page 51, right-hand column  ----- -/--	1, 2, 10-20, 29, 30

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

20 October 2004

Date of mailing of the international search report

05/11/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Hars, J

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/002179

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BOHNER M ET AL: "EFFECTS OF SULFATE, PYROPHOSPHATE, AND CITRATE IONS ON THE PHYSICO-CHEMICAL PROPERTIES OF CEMENTS MADE OF BETA-TRICALCIUM PHOSPHATE-PHOSPHORIC ACID-WATER MIXTURES" JOURNAL OF THE AMERICAN CERAMIC SOCIETY, AMERICAN CERAMIC SOCIETY, COLUMBUS, US, vol. 79, no. 6, 1 June 1996 (1996-06-01), pages 1427-1434, XP000596067 ISSN: 0002-7820 figure 9	21-25, 27,28
X	OTSUKA M ET AL: "PARTICLE SIZE EFFECT OF METASTABLE CALCIUM PHOSPHATES ON CRUSHING STRENGTH OF SELF-SETTING BIOACTIVE CALCIUM PHOSPHATE CEMENT" CHEMICAL AND PHARMACEUTICAL BULLETIN, PHARMACEUTICAL SOCIETY OF JAPAN. TOKYO, JP, vol. 41, no. 11, 1 November 1993 (1993-11-01), pages 2055-2057, XP009001135 ISSN: 0009-2363 figure 5; table II	29
P,X	GBURECK U ET AL: "Ionic modification of calcium phosphate cement viscosity. Part I: hypodermic injection and strength improvement of apatite cement" BIOMATERIALS, ELSEVIER SCIENCE PUBLISHERS BV., BARKING, GB, vol. 25, no. 11, 6 November 2003 (2003-11-06), pages 2187-2195, XP004485137 ISSN: 0142-9612 Online publication date the whole document	1-30
P,X	BARRALET J E ET AL: "Ionic modification of calcium phosphate cement viscosity. Part II: hypodermic injection and strength improvement of brushite cement" BIOMATERIALS, ELSEVIER SCIENCE PUBLISHERS BV., BARKING, GB, vol. 25, no. 11, 19 November 2003 (2003-11-19), pages 2197-2203, XP004485138 ISSN: 0142-9612 Online publication date the whole document	1-30

-/--

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/002179

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>FERNANDEZ ENRIQUE ET AL: "Kinetic study of citric acid influence on calcium phosphate bone cements as water-reducing agent"</p> <p>J. BIOMED. MATER. RES.; JOURNAL OF BIOMEDICAL MATERIALS RESEARCH SEP 15 2002, vol. 61, no. 4, 15 September 2002 (2002-09-15), pages 653-659, XP002301639</p> <p>cited in the application abstract</p> <p>figures 1,2</p> <p>page 657, right-hand column, paragraph 2 - paragraph 3</p>	1-30
A	<p>-----</p> <p>DATABASE MEDLINE 'Online!</p> <p>US NATIONAL LIBRARY OF MEDICINE (NLM), BETHESDA, MD, US; March 2000 (2000-03), CHEN D: "'Physical properties of apatite bone cement!"</p> <p>XP002301640</p> <p>Database accession no. NLM10879182</p> <p>abstract</p> <p>&amp; SHENG WU YI XUE GONG CHENG XUE ZA ZHI = JOURNAL OF BIOMEDICAL ENGINEERING = SHENGWU YIXUE GONGCHENGXUE ZAZHI. MAR 2000, vol. 17, no. 1, March 2000 (2000-03), pages 13-15, 18, ISSN: 1001-5515</p>	1-30
T	<p>-----</p> <p>DATABASE EMBASE 'Online!</p> <p>ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL; 2004,</p> <p>CHEN D-M ET AL: "Study on the mechanical properties of hydroxyapatite bone cement"</p> <p>XP002301641</p> <p>Database accession no. EMB-2004217475</p> <p>abstract</p> <p>&amp; CHINESE JOURNAL OF CLINICAL REHABILITATION 2004 CHINA, vol. 8, no. 8, 2004, pages 1589-1591, ISSN: 1671-5926</p> <p>-----</p>	1-30

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2004/002179

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6425949	B1	30-07-2002	
		AT 211379 T	15-01-2002
		CA 2306562 A1	15-04-1999
		DE 69803398 D1	28-02-2002
		DE 69803398 T2	26-09-2002
		DK 1023032 T3	22-04-2002
		WO 9917710 A1	15-04-1999
		EP 1023032 A1	02-08-2000
		ES 2170533 T3	01-08-2002
		PT 1023032 T	28-06-2002
		JP 2001518359 T	16-10-2001